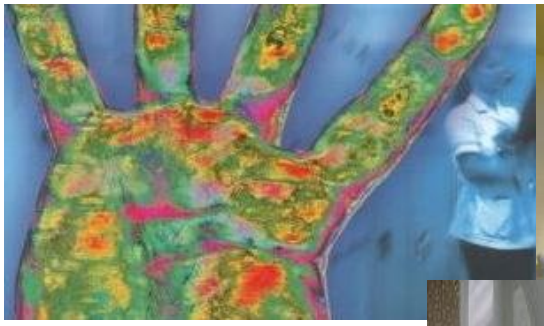
Effective Communication of Microbial Control Research to Encourage Appropriate Policy:

Who should be engaged, and how?

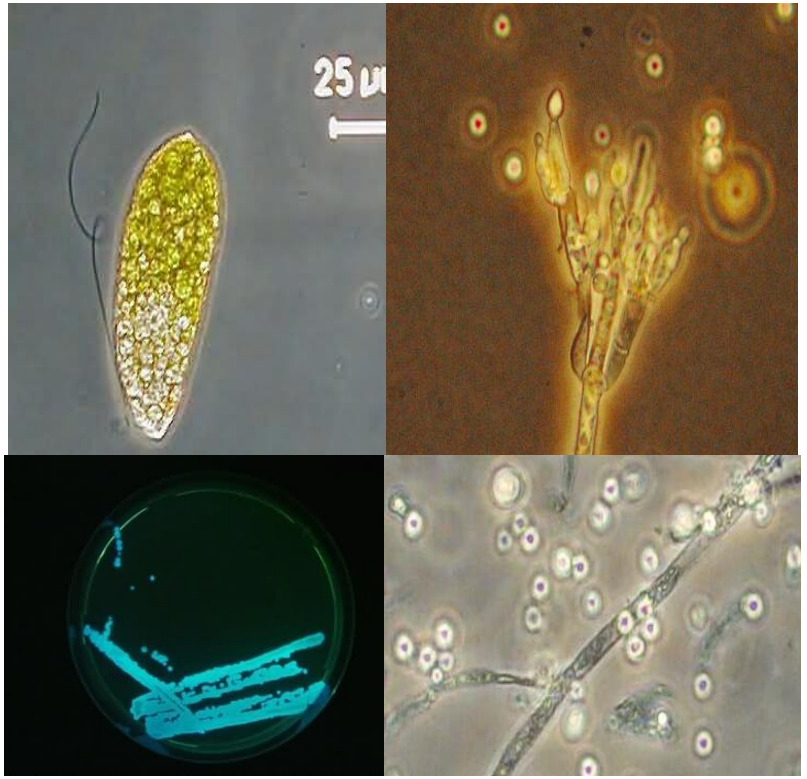
Mrill Ingram
University of Wisconsin

We live in an antimicrobial age…



…despite mounting evidence of “good” microbes critical to our health and well-being.

Public attitudes and policy both reflect antimicrobial attitudes, and public perception of risk analysis has indicated a high level of concern about microbial technologies (Warner et al,2008; Ingram 2010)



Who should be engaged in setting microbial control policy, and how?

Recommendations (*from K. Warner, Lonsdale et al., 2001; Sheppard 2003):*

- **Engage** with the public and their representative organizations;
- Increase **public ownership** in target selection;
- Pursue and ensure **dialogue and understanding** and build **trust** between practitioners and regulators, critics and stakeholders.

Who should be engaged in setting microbial control policy, and how?

Outline of talk:

- Networks a useful method to analyze public participation:(i - mapping, ii - gap analysis, iii - building knowledge exchange and trust)
- Application of networks to microbial biocontrol:
  i. Describe some relevant networks and their anticipated levels of familiarity with microbial technologies and concerns
  ii. What new networks might be necessary?
  iii. Examples of institutions or models that have facilitated public participation in policy-making around new technologies
- Conclusion

Network Analysis

- Even new technologies emerge within a context of existing relationships between humans, and between humans and non-humans, including microbes.
- The network approach can help us move beyond a bulwarked approach to science communication.
- Human-microbial relationships are not only related to biological interdependence but also relate to livelihood, knowledge, expertise.

Applying a network method:

- Mapping: Who might be particularly informed or concerned about microbes or microbial biocontrol? Who might resist, but also who might productively inform?
- Gap analysis: Given the promise of the technology, where are relationships missing? What needs to be changed, and built?
- Fostering participation: a) include existing social networks *within* the R&D process; and b) develop new opportunities people to build trust and knowledge via relationships.

What are some existing relevant "human-microbial" networks?

Professionals who work with microbes:

- Organic farmers
- "Sustainable agriculture" groups
- Artisan cheesemakers
- Ecological restorationists & land managers
- Organic Landscapers

Relevant human-microbial networks (e.g. organic farmers)

EXPERIENCE

- Familiar with concepts of microbial biocontrol (e.g. Bt) and role of microbes in soil, etc.
- Strong concern over weeds/invasive pests
- Well established research and outreach networks

CONCERNS

- GMOs: Use of genetically modified organisms is prohibited by the National Organic Program
- Overuse/lowered effectiveness
- non-indigenous organisms

Gap Analysis: What relationships need to be created? Fostered?

Example:

- ESA and Wolves in Wisconsin -- positive impact of both public education and local control. Resources needed both to provide information but also resources for making complex decisions (in this case about “cohabitation.”)
- WI DNR anticipated need for education as well as local involvement and control.

How to foster positive human-microbial relationships?

Creating spaces for new relationships and for building trust between people

- Lessons from organic agriculture (NOSB), and nanotechnology (ICON) (McCarthy & Welty 2010).
  - **Credibility** in the eyes of multiple stakeholders --- **representation** and **power** (ability to influence decisions).
  - **Sufficient resources** to pursue public education and involvement.
  - "**Cloaking device**" for people typically at odds
  - **Scientific process protected** yet at the same time responding to public concerns.

Conclusions

- The “general public” involves concrete groups of concerned citizens in relevant networks
- Build & support networks for creating trust in the technology and the policy
  - Provide for open, respectful, and multidirectional exchange of information
  - Have the authority to influence science and policy so stakeholders trust they are being heard
- Participatory governance of technology is everyone’s job